Pepperl Fuchs VIM62PP Vibration Sensor User Manual

Contents

Pepperl Fuchs VIM62PP Vibration Sensor

Product Information

- **Product Name:** Vibration sensor VIM62PP-E1V16-0PE-I420V15
- Extended temperature range
- Screw-in thread for simple installation
- Simple electrical commissioning
- Rugged stainless steel housing
- Vibration velocity in mm/s via root mean square formation (rms)
- Suitable for use in hazardous area up to Zone 1/21 with type of protection intrinsic safety
- Vibration sensor with analog current output, increased temperature resistance, suitable up to Zone 1/21 with type of protection intrinsic safety

Product Usage Instructions

To use the Vibration sensor VIM62PP-E1V16-0PE-I420V15, follow the instructions below:

1. Make sure the ambient temperature is within the permissible range.
2. Install the sensor by screwing it in using the provided thread.
3. Connect the sensor to a power source with an operating voltage between 10 and 30 V DC.
4. Ensure the maximum current consumption does not exceed 25 mA.
5. Connect the output of the sensor to the desired device using a connector.
6. For use in hazardous areas, follow the specified connection instructions and ensure compliance with the applicable approvals and certificates.
7. To measure vibration velocity, set the measuring range to 0-16 mm/s.
8. Monitor the vibration velocity output through the analog current output ranging from 4 to 20 mA.
9. Take into account the measurement accuracy and cross-sensitivity of the sensor.
10. Ensure the sensor is properly protected against shocks and vibrations according to the specified standards.

For further information and support, refer to the product manual or contact Pepperl+Fuchs Group.

Vibration sensor

VIM62PP-E1V16-0PE-I420V15

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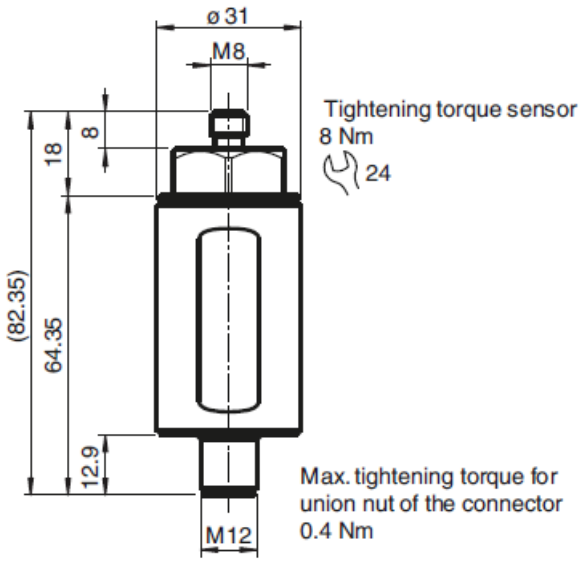
Function

The vibration sensor determines the vibration quantity using rms (root meas square) averaging. This form of quadratic averaging or pre-filtering enables precise trend statements about the condition of the application.
The sensor’s design is impressively robust against tough environmental conditions.
The stainless steel housing provides optimal protection against corrosion. The wide temperature range of the sensor enables reliable measured values even in harsh conditions.
The simple mounting allows for commissioning in any application.

Dimensions



Technical Data

General specifications		
Type		Vibration sensor
Measuring technology		MEMS

Series		Performance Plus Line
Measured variable		Vibration velocity
Measurement range		
Vibration velocity	v- r ms	0 … 16 mm/s

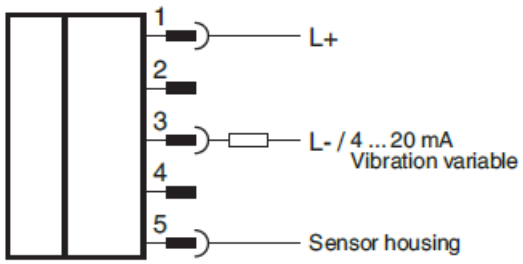
Measurement accuracy		± 0.1 mm/s (calibration point: 90% of the measuring range; 159.2 Hz) Complies with the tolerance requirements of DIN ISO 2954 for measurement range greater than 8 mm/s
Cross-sensitivity		< 5 % of the partial lateral acceleration, which acts exactly 90° to the measuring axis
Frequency range		10 … 1000 Hz
Averaging time		for v-rms: 2 s
Electrical specifications		
Fusing		external fuse is required: 3 A , semi-time-lag , 30 V DC
Operating voltage	U_B	10 … 30 V DC
Current consumption		max. 25 mA
Power consumption	P_0	max. 750 mW
Time delay before availability	t_v	10 s (rms filter is calculated intially with measurement data before they are available at the output)
Surge protection		up to 2 kV
Output 1		
Output type		analog output, current output of the vibration variable
Output rated operating current		4 … 20 mA
Load resistor		≤ 500 Ω
Standard conformity		
Degree of protection		DIN EN 60529, IP66, IP67
Shock resistance		DIN EN 60068-2-27, 60 *g*, 6 ms
Vibration resistance		DIN EN 60068-2-6, 16.5 g, 10 … 1000 Hz
Approvals and certificates		
IECEx approval		
Equipment protection level Gb		IECEx CSAE 22.0042X
Equipment protection level Db		IECEx CSAE 22.0042X
ATEX approval		
Equipment protection level Gb		CSANe 21 ATEX 1074 X
Equipment protection level Db		CSANe 21 ATEX 1074 X
UL approval		

Ordinary Location		E468231 cULus Listed, Class III Power Source and limited energy , if UL marking is marked on the product. For use in NFPA 70 Applic ations only. adapters providing field wiring on request
Maximum permissible ambient tem perature		max. 60 °C (max. 140 °F)
Ambient conditions		
Ambient temperature		-40 … 60 °C (-40 … 140 °F)
Measuring head temperature		-40 … 125 °C (-40 … 257 °F) directly at the mounting point
Storage temperature		-40 … 60 °C (-40 … 140 °F)
Mechanical specifications		
Connection type		plug
Housing material		Stainless steel 1.4305 / AISI 303
Housing length		82.35 mm
Housing diameter		31 mm
Degree of protection		IP66 / IP67 only in connected state
Connector		
Threading		M12
Number of pins		5
Mass		approx. 200 g
General information		

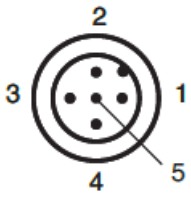
- Use in the hazardous area

  see instruction manuals Only use accessories specified by the manufacturer.

Connection



Connection Assignment



Installation

Further Documentation

The sensor manual is also available as detailed overall documentation. Among other things, installation, grounding concepts and mounting are described there in detail.
You can access the manual via the product detail page at www.pepperl-fuchs.com.

Note

The correct electrical connection and the selection of the appropriate grounding concept are crucial for malfunction-free operation of the sensor. For detailed information you may refer to the manual of the sensor.

Accessories

	**MONAD-M08-1,25-M08-1,25K/368**	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M8 x 1.25, screw-in depth 19.5
	**RSL6-CS-SC-M55P200**	Protective rubber sleeve for VIM6* vibration sensors against ingress of moisture and mechanical effects
	**MONAD-M08-1,25-M10-1,5/36**	Mounting adapter for VIM3*/VIM6* vibration sensors, internal thread M8 x 1.25 x 10, external thread M10 x 1.5, screw-in depth 18
	**MONAD-M08-1,25-M30-3,5/368**	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M30 x 3.5, screw-in depth 45
	**MONAD-M08-1,25-1,2Z-BSPT/36**	Mounting adapter for VIM3*/VIM6* vibration sensors, internal thread M8 x 1.25 x 10, external thread NPT1/2", screw-in depth 24
	**EMCAD-M08-1,25-M08-1,25/36**	EMC adapter for VIM3*/VIM6* vibration sensors, internal thread M8 x 1.25 x 10, external thread M8 x 1.25, screw-in depth 8
	**KFD2-STC4-Ex1**	SMART Transmitter Power Supply
	**V15-W-N4-5M-PUR-N4S5**	Female cordset single-ended M12 gewinkelt A-coded, 5-pin, shield on pin 5, PUR cable 4-core blue, NAMUR, shielded, UL approved, drag chain suitable, oil resistant
	**MONAD-M08-1,25-M06-1,0/36**	Mounting adapter for VIM3*/VIM6* vibration sensors, internal thread M8 x 1.25 x 10, external thread M6 x 1.0, screw-in depth 10
	**MONAD-M08-1,25-M16-2,0/368**	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M16 x 2.0, screw-in depth 27
	**MONAD-M08-1,25-M20-2,5/368**	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M20 x 2.5, screw-in depth 34
	**MONAD-M08-1,25-M24-3,0/368**	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M24 x 3.0, screw-in depth 40

Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
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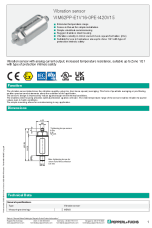
Documents / Resources

	Pepperl Fuchs VIM62PP Vibration Sensor [pdf] User Manual VIM62PP-E1V16-0PE-I420V15, VIM62PP Vibration Sensor, VIM62PP, Vibration Sensor, Sensor